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University Students' Emotions in Lectures: The Effect of Competence Beliefs, Value Beliefs and Perceived Task-difficulty, and the Impact on Academic Performance

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Abstract: This study examined (a) students' experienced emotions in the lectures of the compulsory courses of Psychology, Linguistics and Physics, (b) the role of students' emotions, performance expectations, ability self-perceptions, value beliefs and estimated task-difficulty in the perception of their exam performance as successful or unsuccessful in the above courses, and (c) the role of students' performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty in the formulation of the emotions, and in the impact of the emotions on exam performance. The sample comprised 320 Early Childhood Education female students of 2nd and 3rd year. The results showed that the students experienced a rich variety, and a variation of intensity, of positive emotions in the lectures of the courses which positively influenced the perception of performance as successful or not (mainly, in Psychology). Similarly, value beliefs (not in Psychology) and competence beliefs (mainly, ability self-perception in Psychology, performance expectation in Linguistics, perceived task difficulty in Physics) discriminated the two groups of students in each course. Also, competence beliefs influenced the generation of emotions, but their predictive strength varied across the academic courses and within each academic course, while value beliefs proved weak predictor of emotions. In addition, emotions explained a significant amount of the variability in academic performance (particularly, in Psychology), and altogether, emotions, perceived task difficulty, value beliefs, and competence beliefs generated performance (least, in Linguistics). Finally, the effects of competence- and value- beliefs in the impact of emotions on academic performance differed across the courses, in favoring Physics.

Keywords: Academic Performance, Competence Beliefs, Emotions, Perceived Task-difficulty, Value Beliefs

Introduction

RECENT RESEARCH ON student motivation focuses on emotional and sociocognitive constructs and their role in academic learning and achievement (Anderman & Wolters, 2006; Eccles & Wigfield, 2002; Harackiewicz, Barron, Tauer, & Elliot, 2002; Park, Crocker, & Kiefer, 2007; Pintrich, 2003; Schunk & Zimmerman, 2008; Schutz & DeCuir, 2002; Wosnitza, Karabenick, Efklides, & Nenniger, 2009). However, with the exception of test anxiety (Zeidner, 1998, 2007) and attribution-based emotions in academic achievement (Weiner, 1992, 2002, 2005), students' emotions have been little investigated, particularly in tertiary education (Goetz, Zirngibl, Pekrun, & Hall, 2003; Meyer

& Turner, 2002; Pekrun, Goetz, Titz, & Perry, 2002; Pekrun & Schutz, 2007; Pekrun & Stephens, 2010a,b; Stephanou, 2003, 2006a; Volet & Jarvela, 2001).

Similarly, just, recently, there is an interest in examining students' affects, and the ways in which these affects interact with cognitive, metacognitive and motivational processes as they take action in classroom because, traditionally, cognition and emotions were considered as independent processes of information and behaviour (Boakaerts, 2002; Do & Schallert, 2004; Efklides, 2006b, 2009; Efklides & Petkaki, 2005; Pekrun, 2009; Schutz, Hong, Cross, & Osbon, 2006; Schutz & Lenehart, 2002; Stephanou, 2007; Turner & Schallert, 2001). In addition, while cognitive factors, such as self-concept, perceived task-difficulty and performance expectation, and task-value beliefs, have each been linked to academic performance, little research has explored their interactive role in real academic achievement situations (Boekaerts, Pintrich, & Zeidner, 2000; Eccles & Wigfield, 2002; Marsh, Trautwein, Lüdtke, Koller, & Baumert, 2005; Stephanou, 2004a,b; 2008).

Yet, few investigations have studied how students' emotions and cognitive factors interact in achievement in specific academic domains (Pekrun et al., 2002; Goetz, Frenzel, Pekrun, Hall, & Lüdtke, 2007; Stephanou, 2006a, 2007; Stephanou & Tatsis, 2008), although previous literature suggests that these relationships are relatively domain specific and vary from one academic domain to the other (Ainley, Buckley, & Cha, 2009; Dermitzaki & Efklides, 2000; Efklides, 2001; Schunk & Zimmerman, 2006; Wolters & Pintrich, 1998). Furthermore, as some researchers (e.g., Anderman, 2004; Wigfield, Guthrie, Tonks, & Perencevich, 2004) suggested, students' motivation is better understood by contextualizing beliefs within a given domain rather than just by comparing between domains. The present study focused on Psychology, Linguistics, and Physics compulsory courses so that a more diverse picture of students' motivation is attained.

Overall, little research has examined students' experienced emotions in the lectures, and the interrelations of cognition and emotions in success in tertiary education, particularly in teacher education, although, in such settings, the whole spectrum of emotions is experienced and influence academic development and subjective well-being (see Do & Schallert, 2004; Harackiewicz et al., 2002; Oosterheert & Vermunt, 2001; Pekrun, 2009; Pekrun & Stephens, 2010b; Stephanou, 2006a). The present study is involved in Early Childhood Education studies.

This study is mainly based on Pekrun's (2006) control-value theory of achievement emotions, and Wigfield and Eccles's (2000) expectancy-value model of motivation.

According to Pekrun's theory, the emotions experienced in academic settings can be classified into four major categories as to whether they are positive activating emotions, positive deactivating emotions, negative activating emotions and negative deactivating emotions (Pekrun, 1992, 2009; Pekrun et al, 2002). Positive emotions are typically pleasant, sought after, or appreciated. Negative emotions are typically unpleasant, not actively pursued, and avoided. Activating emotions (e.g., hope, enjoyment of learning) are those that push the student to act or to be engaged in a task. Deactivating emotions (e.g., hopelessness, boredom), in contrast, influence the student to rest, disengaged or avoid a task. In addition, certain emotions (e.g., hope, anxiety) are derived from the self or the task, academic learning processes-related emotions (e.g., excitement, joy, or boredom) derived from the actual completion of the task, while academic achievement-related emotions (e.g., as pride or shame) occur after task achievement. Finally, social emotions are formulated from the interaction with the others (e.g., admiration, envy), or that directed at others (e.g., anger). Overall, control-related

(e.g., expectancy beliefs) cognitions and subjective values-related (e.g., goals, importance) beliefs are the most significant antecedents of students' academic emotions. These cognitive appraisals mediate the associations of emotions with social (teacher, classmates, family) environment, with respect, mainly, to competence support, autonomy support versus control, expectations and goal structures, achievement outcomes and feedback, and social relatedness. Research, based on this model, reported a wide range of academic emotions, that is, emotions related to academic achievement (such as pride or shame) and academic learning processes (such as excitement, joy, or boredom) (see Efklides & Volet, 2005; Pekrun, Frenzel, Goetz, & Perry, 2007; Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010; Pekrun & Stephens, 2010a; Stephanou, 2007).

The expectancy-value model of motivation (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000) suggests that task value and expectancy beliefs are the most significant formulators of achievement behaviour. Expectancy is defined as one's expectation for future success and is related to one's competence beliefs. Value refers to the importance and the interest of the task. It comprises the components of intrinsic interest, utility, importance, and cost. Value and expectancy is mainly related to academic choice and performance, respectively. These two sets of beliefs are influenced by task specific self-concept and task difficulty beliefs. The self-concept belief is student's perceptions of his / her ability to do a task, while task difficulty belief represents the student's judgments of the difficulty of the task.

Relationships Among Competence Beliefs, Perceived Task-difficulty, Value Beliefs, Emotions, and Academic Performance

In sum, previous studies on emotions in academic learning and achievement have illustrated, on one hand, that emotions influence cognitive information processing, quality of thinking, motivation, learning strategies, self-regulation, metacognition, and achievement (Boakaerts, Pintrich, & Zeidner, 2000; Efklides & Volet, 2005; Kuhbandner, Hanslmayr, Maier, Pekrun, Spitzer, Pastötter, & Bäuml, 2009; Pekrun et al., 2010). For example, positive emotions, such as curiosity, enjoyment, hope and pride, enhance motivation, facilitate learning and increase performance (Clare & Huntsinger, 2009; Meyer & Turner, 2002; Pekrun et al., 2002; Stephanou, 2006a, 2007), while intense negative emotions, like anxiety, hopelessness, boredom and insecurity, and related thoughts, like a feeling of incompetent, interfere with learning, decrease motivation and performance, and affect the decision to withdraw from academic courses (Goetz et al., 2003; Kuyper, van der Werf, & Lubbers, 2000; Pekrun, Goetz, Daniels et al., 2010; Zeidner, 2007). On the other hand, emotions arise 'in response to the meaning structures of given situations' (Frijda, 1988, p. 349), and the appraisal of a certain learning situation is influenced by self-beliefs (Frijda, 2009; Weiner, 2002, 2005). Specifically, cognitions are the most significant antecedents of students' experienced emotions in the classroom (Goetz et al., 2003; Pekrun, 2009; Pekrun et al., 2002). Factors such as student's goals, values, motives, prior knowledge and perceptions of self contribute into eliciting an emotional response to a given classroom situation (Anderman & Wolters, 2006; Goetz, Frenzel, Hall, & Pekrun, 2008; Perry, Turner, & Meyer, 2006; Schutz & Lenehart, 2002; Turner & Schallert, 2001). For example, expectations of high achievement, beliefs of ability to master the task and attached high value to task create the feeling of pleasure (Glaser-Zikuda, Fub, Laukenmann, Metz, & Randler, 2005; Glaser-Zikuda & Mayring, 2003; Linnenbrink & Pintrich, 2000; Pekrun, 2000). Similarly, engagement in an interest activity

or high valuable task produces positive feelings such as enjoyment (Anderman & Wolters, 2006; Stephanou, 2006a, 2007). In contrast, beliefs of inadequate ability in accomplishment the task, expectations of low performance and lack of interest in the task contribute into forming the feelings of hopelessness and anxiety (Pekrun et al., 2002; Stephanou, 2004b; Zeidner, 1998, 2007). Also, perceived task-difficulty influences task- and future activity-emotions like boredom, enthusiasm and confidence (Efklides, 2006a,b; Pekrun, 2009; Pekrun & Schutz, 2007). Other studies suggest that the effect of mood on behaviour is influenced by how the individuals interpret negative information about themselves (Efklides, 2006b; Efklides & Petkaki, 2005; Siemer, Mauss & Gross, 2007; Trope, Hassin, & Gervy, 2001; Turner, Thorpe, & Meyer, 1998). More precisely, students, with failure academic experience, which is usually related to low self concept, tend to experience negative mood, when they face negative information about themselves. This negative mood, along with low success expectations, lead to avoidance of challenging task, low effort, and, thus, minimizing of capabilities.

The findings from previous researches regarding the role of self-perceived factors in academic achievement supported their positive effect on it. Specifically, investigations have shown the positive role of ability self-perception on performance, even after controlling for ability (Beane, 1999; Pintrich & Schunk, 2002). Similarly, previous research has shown that high expectations for success are related to task engagement, persistence in carrying out tasks, effective use of cognitive and metacognitive strategies, and successful performance (Efklides, 2001; Pintrich, 1999; Stephanou, 2003, 2008; Vollmeyer & Rheinberg, 2000). Also, perceived task-difficulty is associated with the academic performance, since it facilitates the awareness of the process in pursuit the target goal and correlates strongly with self-regulatory process (Dina & Efklides, 2009; Efklides, 2006a; Zimmerman & Schunk, 2001). In a similar way, students' high value beliefs are associated with enjoyment, high effort in pursuing the goals, successful performance, and future academic choices (Bruinsma, 2004; Eccles, Barber, Updegraff, & O' Brien, 1998; Eccles & Wigfield, 2002; Stephanou, 2004a, 2008).

Objective vs. Subjective Academic Performance

In tertiary education, academic performance has been usually estimated what grade one gets in a specific academic course. However, performance is also perceived as successful or not, regardless of the exact grade gained. It has been long recognized that success and failure are better seen as psychological states, based upon students' own interpretation of performance (Anderman & Wolters, 2006; Dweck, 1999). Students' performance expectations, goals, values, and self-perceptions of ability in a specific course influence the perception of how successful performance is, and the subsequent emotions (Anderman & Wolters, 2006; Pintrich, 2003; Schunk & Zimmerman, 2006; Stephanou, 2008). Perceived performance, as compared to the objective one, has been found to be also related to students' achievement motivation and actual achievement (Weinstein, 1998; Stephanou, 2008). From the expectancy-value perspective, one would expect performance expectations and value beliefs to be related to the subjectively defined successful performance rather than to objective performance, since the strength of motivation is jointly influenced by the expectation of a particular performance outcome (successful or not) and by the value placed on this performance outcome. For this

reason, in the present study, besides objective performance, students were also asked to define what they consider successful performance for themselves.

Aim of the Study and Hypotheses

This study aimed at investigating: (a) The students' emotions that they usually experience in the lectures of Psychology, Linguistics and Physics courses in academic semester, (b) the relations of students' emotions, performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty with academic performance in the above courses, (c) if the associations of students' emotions, performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty with performance are differentiated depending on whether they perceive their academic performance in the same courses as successful or unsuccessful and (d) the role of students' performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty in the formulation of the same emotions, and in the impact of the emotions on academic performance.

The hypotheses of the study were the following:

Students will experience various, and a variety of intensity, of emotions (mainly, enjoyment, anxiety, not boredom-boredom, interest, pride, not anger-anger) in the lectures, but there will be differences in their prevalence across the various academic courses (Hypothesis 1).

The students, who perceive their performance as successful, will experience more intense positive emotions (mainly, self-esteem-, self- and expectancy- related emotions) in the lectures than the students who estimate their performance as unsuccessful in the respective academic course (Hypothesis 2a). The relative power of emotions in discriminating the two groups of students will differ across the three academic courses (Hypothesis 2b).

The students, who perceive their performance as successful, compared to those who perceive it as unsuccessful in an academic course will have higher value beliefs, higher performance expectations, higher ability self-perceptions and lower perceived task-difficulty in the respective academic course (Hypothesis 3a). Performance expectations, as compared to other factors, will be the most powerful formulator of academic performance in each academic course (Hypothesis 3b).

Students' performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty will have positive effect on the generation of their emotions in the respective course, (Hypothesis 4a). Performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty will mainly influence the future behaviour-, interest-, self-esteem- and task- and future activity- related emotions, respectively (Hypothesis 4b). The pattern of the associations will differ across academic courses (Hypothesis 4c).

Students' emotions (mainly, the expectancy- and the self-esteem- related) in the lectures of the courses will have positive effect on their performance in the respective course (Hypothesis 5a). Students' performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty will influence the impact of their experienced emotions in the lectures on the generation of their performance in the respective course, but

there will be differences in their prevalence across the academic courses (Hypothesis 5b).

Method

Participants

A total of 320 Early Childhood Education female students of 2nd and 3rd year participated into the study. Due to the nature of Early Childhood Education studies, the sample of this investigation comprised only female students. They randomly came from three Greek Universities. The distribution of students per perceived successful or unsuccessful performance within each course was the following: Psychology: 207 and 113, Linguistics: 156 and 164, and Physics: 178 and 142.

Instruments

A questionnaire with separate versions for Psychology, Linguistics, and Physics was constructed. It comprised seven scales. The questionnaire was based on previous research (see Eccles & Wigfield, 2002; Harackiewicz et al., 2002; Nagy, Trautwein, Baumert, Koller, & Garrett, 2006; Pekrun, 2000; Pekrun et al, 2002; Pintrich & Schunk, 2002; Stephanou, 2004a, 2004b, 2006a, 2007, 2008). The wording of the questions of the scales for the three courses was the same except for the course name.

The Value Beliefs scale consisted of four questions (e.g., “How much do you value Psychology?”, “How valuable is Psychology for you?”). Responses ranged from 1 = not at all to 7 = very much. Cronbach’s alphas were .83, .81 and .84 for Psychology, Physics and Linguistics, respectively.

The Performance Expectations scale consisted of four questions (e.g., “How well do you think you will do in Linguistics this academic semester?”, “How good will your performance be in Linguistics this academic semester?”). Responses ranged from 1 = very poorly to 10 = excellent. The 10-point scale was used to match the university marks scale. Cronbach’s alphas were .84, .82 and .81 for Psychology, Physics and Linguistic, respectively.

The Ability Self-perception scale comprised six questions (e.g., “How good do you think you are in Psychology?”, “How good are you in Psychology?”). Responses ranged from 1 = not at all good to 7 = excellent. Cronbach’s alphas were .83, .86 and .82 for Psychology, Physics and Linguistic, respectively.

The Perceived Course-difficulty was measured via a 7-point scale, which consisted of five questions (e.g., “How difficult is Psychology for you?”). Responses ranged from 7 = not at all difficult to 1= very difficult. Cronbach’s alphas were Psychology: .78, Physics: .80, and Linguistics: .81.

The Academic Emotions scale consisted of eighteen emotions, happiness, pleasure, satisfaction, cheerfulness, calmness, not irritated-irritated, pride, encouragement, not anxiety-anxiety, boredom-not boredom, interest, hope, confidence, competence, not angry-angry, excitement, enthusiasm, and enjoyment. The students were asked to indicate the extent to which they usually experienced the emotions in the lectures of each course during the specific academic semester. The emotions had the form of opposite adjectives, with the positive one having the high score of 7 and the negative adjective having the low score of 1 (e.g.,

happy 7 6 5 4 3 2 1 unhappy). The consistency of the scale was based on previous research (see Park et al., 2007; Pekrun, 2000; Pekrun et al, 2002; Pintrich & Schunk, 2002; Stephanou, 2006a, 2007; Weiner, 1992, 2002).

Objective and Subjective Semester Performance. Students' semester marks in the three courses came from the university records. They represented objective academic performance, which came from final written exams.

Besides university marks, students' perception of their semester performance as successful or unsuccessful was also measured. Students were asked to indicate how successful they thought their semester performance was. The students indicated the lowest mark (from 1 to 10) over which their semester performance in each course would be considered successful.

Students whose semester mark was lower than the indicated as successful formed the group of unsuccessful performance, while those whose semester mark was equal or higher than the indicated one formed the successful performance group.

The participants' personal information scale consisted of a set of questions relevant to personal factors, such as age, gender and academic semester.

Procedure

The participants completed the questionnaire for each of the three (Psychology, Linguistics, Physics) compulsory courses in the middle of an academic semester, to ensure that they had good time to form an impression of the examined variables. Also, to ensure that any relation between emotions and the other variables was not due to procedure used, students completed first the emotions scale and then the rest of the scales.

The students completed the questionnaires at their Department, in front of the researchers' co-workers, who were female postgraduate students and had trained for this particular part of the research by the investigators. To match the questionnaires that were responded by the same student, students were asked to choose a code name and use it on the response sheets. To match the students with the university records, first, they were given individually their semester marks, as found in the university records, in the three academic courses, then, the participants were asked to rewrite their marks on a separate sheet of paper and use their code name on it. Students were assured of anonymity and confidentiality.

Results

Experienced Emotions in the Lectures, Competence Beliefs, Value Beliefs, Perceived Task-difficulty and Successful and Unsuccessful Subjective Performance Groups

Because we were interested in differences between the experienced emotions in lectures within course, we conducted three MANOVAs, one for each course, in which the students' experienced emotions in the lectures of the course were the dependent variables. Significant effect was found in Psychology, Wilk's lambda = .018, $F(18, 302) = 926.25$, $p < .01$, $\eta^2 = .98$, in Linguistics, Wilk's lambda = .017, $F(18, 302) = 966.40$, $p < .01$, $\eta^2 = .98$, and in Physics, Wilk's lambda = .026, $F(18, 302) = 630.30$, $p < .01$, $\eta^2 = .96$. The mean scores and post hoc pairwise comparisons indicated that the students experienced a rich variety, and a variation of intensity, of positive emotions in the lectures of the courses (Table 1). Specifically,

in the lectures of Psychology, the students experienced more intensely the positive emotions of not irritated, enjoyment, not angry, not boredom and competence, and less intensely the positive emotions of not anxiety, cheerfulness, encouragement and happiness. In the lectures of Linguistics, not anger, enjoyment, confidence and pride were the most intense positive emotions, while the moderate positive emotions were that of not anxiety, interest, not boredom, and encouragement. Finally, in the lectures of Physics, the students felt mainly the positive emotions of not irritation, not anger, encouragement and satisfaction, whereas they experienced moderately the positive emotions of not anxiety, pride, happiness and not boredom.

The above findings confirmed Hypothesis 1.

Table 1: Mean Scores and Standard Deviations of Students’ Experienced Emotions in the Lectures of the Courses Psychology, Linguistics, and Physics

	Psychology		Linguistics		Physics	
	Mean	SD	Mean	SD	Mean	SD
Happiness	4.92	1.30	4.86	1.31	5.08	1.19
Satisfaction	5.20	1.47	4.90	1.30	5.55	1.38
Pleasure	5.06	1.47	4.91	1.31	5.17	1.37
Pride	5.19	1.58	4.99	1.24	5.05	1.19
Encouragement	4.94	1.45	4.83	1.46	5.55	1.51
Confidence	5.04	1.59	5.09	1.74	5.34	1.33
Calmness	4.95	1.28	4.80	1.72	5.28	1.39
Not angry- Angry	5.45	1.64	5.52	1.42	5.68	1.43
Excitement	5.15	1.72	4.51	1.48	5.29	1.41
Cheerfulness	4.90	1.31	4.79	1.19	5.27	1.19
Interest	5.13	1.64	4.45	1.72	5.44	1.43
Not irritated-irritated	5.71	1.44	4.91	1.87	5.71	1.30
Hope	5.05	1.57	4.83	1.88	5.38	1.45
Competence	5.20	1.5	4.92	1.61	5.20	1.89
Enjoyment	5.58	1.58	5.13	1.78	5.38	1.70
Anxiety	4.23	1.43	4.03	1.80	5.05	1.43
Enthusiasm	4.97	1.43	4.65	1.37	5.23	1.53
Not boredom - Boredom	5.39	1.55	4.50	1.77	5.14	1.56

The findings from ANOVAs, with the perceived (successful / unsuccessful) performance as between subjects factor, and examination of the emotion scores showed that the successful performance group experienced more intense positive emotions in the lectures than the unsuccessful performance group in each academic course.

In addition, Discriminant analysis, with stepwise method, was conducted to determine the set of emotions that best discriminated the group of students who estimated their semester performance as successful from the group of students who estimated their semester performance as unsuccessful. The students' experienced emotions in the lectures of course were the predictor variables, and the perceived academic performance was the grouping variable. This analysis was conducted in each academic course. The findings from the analyses (Table, 2) confirmed the results from ANOVAs, and revealed the relative power of emotions in discriminating the perceived successful from unsuccessful performance groups varied across academic courses. Additionally, the emotion of confidence, discriminating power = .56, Cohen's $d^1 = .94$, followed by the emotions of cheerfulness, discriminating power = .55, Cohen's $d = 1.00$, pride, discriminating power = .55, Cohen's $d = 1.01$, and calmness, discriminating power = .56, Cohen's $d = 1.00$, as compared to the other emotions, was the most powerful factor in discriminating the two groups of students in Psychology. In Linguistics, the successful performance group was mainly discriminated from the unsuccessful performance group by the emotion of pleasure, discriminating power = .34, Cohen's $d = .70$, followed by the emotions of competence, discriminating power = .34, Cohen's $d = .68$, hope, discriminating power = .34, Cohen's $d = .64$, and not angry- angry, discriminating power = .34, Cohen's $d = .61$. Regarding the findings for Physics, the emotion of excitement, discriminating power = .42, Cohen's $d = .95$, followed by the emotions of happiness, discriminating power = .40, Cohen's $d = .77$, and enjoyment, discriminating power = .39, Cohen's $d = .76$, in comparison to the other emotions, was the most powerful discriminator in separating the two groups of students. However, the emotions of encouragement, interest, enjoyment, not anxiety-anxiety and enthusiasm had no significant contribution in discriminating the two groups of students in Psychology. Similarly, the emotions of happiness, confidence, excitement, cheerfulness, irritated – not irritated, enjoyment and enthusiasm had no significant contribution in separating the two groups of students in Linguistics. Finally, the emotions of pleasure, excitement and not anxiety-anxiety did not contribute in discriminating the successful from the unsuccessful performance groups in Physics.

Furthermore, the emotions differentiated more the two groups of students in Psychology, Cohen's d ranged from .69 to 1.00, than in both Linguistics, Cohen's d ranged from .06 to .70, and Physics, Cohen's d ranged from .29 to .74, and in Physics than in Linguistics (the pattern was opposite for pleasure, pride, interest and encouragement).

These findings are partly in agreement with Hypothesis 2a, and confirmed Hypothesis 2b

¹ According to Cohen (1992), small, medium, and large effect sizes are .20, .50, and .80, respectively.

Table 2. Discriminant Analyses for the Effects of the Experienced Emotions in the Lectures of the Courses on Separating the Perceived Successful from the Perceived Unsuccessful Performance Group by Academic Course

	Psychology						Linguistics						Physics										
	Successful performance		Unsuccessful performance		F(U, 318)	d	Successful performance		Unsuccessful performance		F(U, 318)	d	Successful performance		Unsuccessful performance		F(U, 318)	d					
	Mean	SD	Mean	SD			Mean	SD	Mean	SD			Mean	SD	Mean	SD			Mean	SD			
Happiness	5.27	.98	4.29	1.60	.39	.75	.47	5.03	1.05	4.70	1.52	-.06	-.06	5.49	.95	4.57	1.30	.40	.77	55.36			
Satisfaction	5.67	1.10	4.33	1.66	.48	.91	.74	5.14	1.00	4.68	1.50	.16	.33	5.98	1.18	5.02	1.42	.36	.69	43.80			
Pleasure	5.47	1.16	4.30	1.67	.40	.79	54.48	5.39	1.02	4.46	1.40	.34	.70	44.79	5.51	4.75	1.42	-.	.55	26.28			
Pride	5.75	1.22	4.15	1.65	.55	1.01	95.98	5.33	1.20	4.65	1.20	.25	.54	25.88	5.21	1.02	4.84	1.35	.15	.31	7.70		
Encouragement	5.45	.94	4.01	1.75	-.09	-.09	90.95	5.14	1.40	4.53	1.45	.19	.41	14.08	5.75	1.35	5.30	1.70	.14	.29	7.03		
Confidence	5.57	1.17	4.07	1.79	.56	.94	81.39	5.54	1.38	4.67	1.95	-.05	-.05	21.23	5.73	1.10	4.86	1.45	.32	.65	36.95		
Calmness	5.41	.98	4.12	1.40	.55	1.00	96.32	5.05	1.69	4.57	1.82	.12	.27	6.38	5.38	1.20	5.15	1.60	-.	-.	-.		
Not angry-angry	5.96	1.26	4.50	1.85	.47	.89	70.45	5.97	1.32	5.09	1.40	.29	.61	33.10	6.11	1.05	5.14	1.62	.35	.67	41.22		
Excitement	5.72	1.30	4.11	1.87	.50	.93	80.31	4.94	1.24	4.11	1.60	-.05	-.05	26.66	5.79	1.25	4.66	1.38	.43	.94	59.29		
Cherfulness	5.37	1.05	4.05	1.40	.55	1.00	94.46	4.97	1.15	4.64	1.20	-.05	-.05	6.08	5.52	1.05	4.95	1.28	-.05	-.05	47	19.08	
Interest	5.62	1.28	4.23	1.85	-.05	-.05	84	63.41	4.92	1.55	4.00	1.76	.25	.53	24.89	5.70	1.34	5.10	1.50	.20	.41	14.40	
Not irritated-irritated	6.10	1.00	5.00	1.84	.39	.76	49.07	5.45	1.90	4.39	1.67	-.05	-.05	27.78	6.12	1.00	5.19	1.45	.37	.71	46.17		
Hope	5.47	1.23	4.27	1.81	.43	.76	48.99	5.46	1.75	4.24	1.80	.31	.64	37.21	5.80	1.15	4.85	1.60	.33	.65	37.24		
Competence	5.54	1.22	4.38	1.61	.44	.84	60.88	5.48	1.68	4.38	1.35	.32	.68	41.92	5.35	2.00	5.01	1.75	-.05	-.05	-.		
Enjoyment	6.01	1.18	4.80	1.91	-.05	-.05	76	48.78	5.61	1.63	4.68	1.80	-.05	-.05	23.45	5.96	1.48	4.66	1.70	.39	.76	52.50	
Anxiety	4.58	1.25	3.58	1.50	-.05	-.05	69	39.85	4.14	1.88	3.93	1.75	-.05	-.05	5.41	1.27	4.59	1.50	-.05	-.05	57	27.33	
Enthusiasm	5.34	1.32	4.29	1.39	-.05	-.05	73	44.41	4.89	1.37	4.42	1.33	-.05	-.05	34	9.36	5.58	1.40	4.78	1.55	.26	.52	23.59
Not boredom-boredom	5.90	1.18	4.45	1.70	.50	.93	79.29	4.75	1.90	4.25	1.63	.12	.29	6.44	5.61	1.45	4.54	1.50	.35	.68	40.93		

Note: F- values > 6.44 are significant at the .01 level of significance; F- values ≤ 6.44 are significant at the .05 level of significance; - = no significant difference at the level of .05 of significance; DP = Discriminating power; --- = nonsignificant contribution in discriminating the two groups; d = Cohen's d.

The findings from ANOVAs, with the perceived (successful / unsuccessful) performance as between subjects factor, and examination of the mean scores revealed that the successful group of students estimated their ability as higher, perceived the task as less difficult, had

higher value beliefs and had higher performance expectations than the unsuccessful group of students in each academic course.

The results from Discriminant analyses, with stepwise method, (Table 3) confirmed the univariate effects and, in addition, showed that ability self-perception, discriminating power = .95, Cohen's $d = 1.3$, performance expectations, discriminating power = .85, Cohen's $d = .94$, and perceived course-difficulty, discriminating power = .92, Cohen's $d = 1.06$, as compared to the other variables, was the most powerful factor in discriminating the successful group of students from the unsuccessful group of students in Psychology, Linguistics and Physics, respectively. Furthermore, value beliefs had no significant contribution in discriminating the two groups of students in Psychology, while performance expectations had no significant contribution in separating the successful from the unsuccessful performance groups in Physics.

The above findings partly confirmed Hypotheses 3a and 3b.

Table 3. Discriminant Analyses for the Effects of Ability Self-Perceptions, Perceived Task-Difficulty, Performance Expectations and Value Beliefs on Separating the perceived Successful from the Perceived Unsuccessful Performance Group by Academic Course

	Psychology						Linguistics						Physics					
	Successful performance			Unsuccessful performance			Successful performance			Unsuccessful performance			Successful performance			Unsuccessful performance		
	Mean	SD	F(1, 318)	d	D	P	Mean	SD	F(1, 318)	d	D	P	Mean	SD	F(1, 318)	d	D	P
Performance expectations	7.17	1.05	.80	4.53	.98	.78	6.10	1.25	.51	68.00	.78	5.90	1.52	.85	89.72	.94	.85	.44
Perceived ability	5.52	.80	1.03	99.45	.95	.78	4.53	.98	1.03	99.45	.95	4.24	1.10	.70	61.39	.87	.70	.00
Perceived difficulty	3.66	1.25	.82	5.95	.87	.22	3.15	.86	.44	15.14	.22	3.45	1.30	.57	40.75	.67	.57	.77
Value beliefs	6.10	.82	5.95	.87	.22	11.58	5.95	.79	5.53	1.60	.35	5.23	1.4	.46	15.60	.33	.35	.44

Note: All F values > 4.90 are significant at the .01 level of significance; F = 4.90 is significant at the level of .05 of significance; DP = Discriminating power; --- = non-significant contribution in discriminating the two groups; d = Cohen's d.

Effects of Perceived Task-difficulty, Competence Beliefs and Value Beliefs on Emotions, and on the Impact of Emotions on Academic Performance

Inspection of the results for the three academic courses from correlation coefficients analyses (Tables 4) indicated that the strength of the association of the self-, task- and value beliefs with the emotions varied across the academic courses and within each academic course. Performance expectations was mainly associated with expectancy- and general-, expectancy-, self- and other-, and self-, general-, task- and expectancy- related emotions in Psychology, Linguistics and Physics, respectively. Ability self-perceptions were more strongly correlated to expectancy-, self- and general- related emotions in Psychology, other-, task- and context-related emotions in Linguistics, and anxiety, other- and general- related emotions in Physics. Perceived task-difficulty was evidenced the most powerful association with the task-, context- and expectancy- related emotions in Psychology, expectancy- and context- related emotions in Linguistics, and context-, general- and task- related emotions in Physics. Finally, value beliefs were predominately, but weakly, correlated to other-, context- and task- related emotions in Psychology, context- related emotions in Linguistics, and self- context- and general- related emotions in Physics.

More precisely, in Psychology, performance expectations evidenced the strongest association with the emotions of confidence, hope, encouragement, cheerfulness and enthusiasm, perceived self-ability was most strongly related to emotions of confidence, not anxiety-anxiety, hope, cheerfulness, pride and encouragement, perceived task-difficulty was mainly associated with the emotions of not excitement, confidence, pleasure, not boredom-boredom and interest, while value beliefs were related more closely to not irritated-irritated and interest. In Linguistics, performance expectations was most strongly associated with the emotions of hope, pride, pleasure, confidence not angry-angry, ability self-perceptions was mainly related to emotions of not irritated-irritated, competence, enjoyment, calmness, interest and not boredom – boredom, perceived task-difficulty evidenced the strongest association with the emotions of encouragement, confidence, competence, happiness and pleasure, and value beliefs with the emotion of enjoyment. In Physics, performance expectations was mainly associated with the emotions of pride, happiness, not boredom – boredom, calmness, interest and encouragement, perceived self-ability was predominately related to emotions of not anxiety – anxiety, not irritated-irritated, and pleasure, perceived task-difficulty was mostly linked to emotions of pleasure, confidence, not excitement, satisfaction, enjoyment, enthusiasm and not anxiety-anxiety, and value beliefs were particularly associated with the emotions of not boredom-boredom, pleasure, happiness, pride, confidence, encouragement and not anxiety-anxiety.

Table 5 displays the results from multiple regression analyses, with each of the emotions as the criterion variable and ability self-perceptions, performance expectations, perceived task-difficulty and value beliefs as predictor variables.

The findings revealed that (a) ability self-perception, perceived task-difficulty, value beliefs and performance expectations, as a group, had significant and positive effect in the formulation of the experienced emotions (mainly, self- and future activity- related) in the lectures in Psychology, R^2 ranged from .18 for not irritated-irritated to .56 for confidence, in Linguistics, R^2 ranged from .10 for not anxiety-anxiety to .34 for competence, and in Physics, R^2 ranged from .13 for cheerfulness to .41 for pleasure, (b) the students, who had higher ability self-perceptions, perceived the task as less difficult, had higher value beliefs and had higher

performance expectations, felt better in the lectures than the students, who estimated the respective factor as less favorite, in each academic course, (c) altogether, the four predictor variables were better formulators of the emotions in Psychology than in Linguistics (except for hope, competence, and enjoyment), and Physics (except for pleasure, and not boredom-boredom), (d) performance expectations and / or ability self-perceptions, compared to both value beliefs and task difficulty, were more powerful predictors of the emotions in both Psychology and Linguistics, while perceived task-difficulty was the best predictor of most of the emotions in Physics, (e) both performance expectations and ability self-perceptions were more powerful formulators of the emotions in Psychology than in Physics or Linguistics, whereas both perceived task-difficulty and value beliefs were better predictors of the emotions in Physics than in the other two courses, (f) value beliefs contributed significantly to generation of a limited number of emotions in Psychology, with b ranging from .10 to .30, and in Physics, with b ranging from .11 to .34, and had nonsignificant contribution in the generation of the emotions in Linguistics. .

Thus, Hypotheses 4a, 4b and 4c were partly confirmed.

Table 4: Correlations Among Ability Self-perceptions, Perceived Task-difficulty, Performance Expectations, value beliefs, Experienced Emotions in the Lectures and Semester Performance in Psychology, in Linguistics, and in Physics

(N = 320)	Psychology					Linguistics					Physics				
	P.E.	P.A.	P. T. D.	V. B.	S. P.	P.E.	P.A.	P. T. D.	V. B.	S. P.	P.E.	P.A.	P. T. D.	V. B.	S. P.
<i>Emotions</i>															
Happiness	.54	.42	.23	--	.21	.33	.33	.41	--	--	.36	.13	.30	.41	.16
Satisfaction	.52	.46	.20	.15	.35	.35	.27	.17	--	.20	.24	.21	.42	.35	--
Pleasure	.54	.42	.32	.13	.23	.53	.37	.40	--	.32	.30	.24	.48	.43	--
Pride	.52	.49	.13	--	.45	.54	.20	.22	--	.22	.42	.21	.34	.37	.32
Encouragement	.62	.48	.28	.17	.34	.36	.31	.55	--	.20	.29	.22	.35	.37	.18
Confidence	.68	.53	.36	.26	.34	.50	.24	.46	--	.23	.20	.13	.44	.37	.15
Calmness	.41	.45	.19	.17	.37	.34	.43	.23	--	.22	.32	--	.29	.24	.13
Not angry-angry	.51	.31	.28	.21	.30	.48	.28	.17	--	.35	.20	.15	.35	.20	.23
Excitement	.54	.36	.40	.20	.26	.37	.27	.18	--	--	.21	.13	.43	.34	.18
Cheerfulness	.61	.51	.21	.15	.40	.15	.28	.28	--	.32	.14	--	.21	.34	.18
Interest	.51	.43	.31	.28	.26	.27	.43	.24	--	.17	.32	.17	.39	.29	.12
Not irritated-irritated	.32	.32	--	.29	.24	.45	.51	.37	.16	.31	.17	.26	.37	.22	.17
Hope	.61	.50	.27	.22	.25	.56	.32	.30	--	.28	.21	--	.32	.36	.24
Competence	.54	.38	.13	--	.41	.46	.46	.47	.17	.30	.19	--	.19	--	.19
Enjoyment	.46	.43	.12	.24	.30	.42	.46	.16	.26	.13	.11	--	.42	.22	.21
Anxiety	.48	.53	.12	--	.32	.25	.29	.16	.17	--	.19	.34	.39	.37	--
Enthusiasm	.57	.46	.30	.20	.19	.29	.39	.29	.21	.26	.19	.17	.39	.35	.13
Not boredom-boredom	.51	.35	.32	.16	.35	.28	.41	.27	--	.18	.34	.16	.35	.43	.19
<i>Semester performance</i>	.50	.60	.19	.21	1.00	.38	.34	.30	.13	1.00	.32	.58	.47	--	1.00

Note: P.E. = Performance expectations; P.A. = Ability self-perceptions; P. T. D. = Perceived task difficulty; V. B. = Value beliefs; S. P. = Semester performance; $r > .13, p < .01$; $r < .13, p < .05$, -- = no significant correlations at the .05 level of significance.

Table 5: Findings from Multiple Regression Analyses for the Effects of Ability Self-perceptions, Perceived Task-difficulty, Performance Expectations, and Value beliefs on the Experienced Emotions in the Lectures in Psychology, in Linguistics, and in Physics

	Psychology			Linguistics			Physics					
	R2	F	t	R2	F	t	R2	F	t			
Happiness			beta*			beta*			beta*			
		P.E.	.44	7.10		P.E.	.18	3.11		P.E.	.33	5.68
		P.A.	.12	2.05		P.A.	.08	---		P.A.	.48	6.47
		P.T.D.	.07	---		P.T.D.	.30	5.10		P.T.D.	.48	7.09
		V.B.	..	..		V.B.	..	..		V.B.	.28	5.12
		P.E.	.39	6.09		P.E.	.29	4.79		P.E.	.16	2.74
		P.A.	.16	2.36		P.A.	.14	2.13		P.A.	.40	5.21
		P.T.D.	.04	---		P.T.D.	.01	---		P.T.D.	.60	8.75
		V.B.	.07	---		V.B.	..	..		V.B.	.24	4.42
		P.E.	.46	7.30		P.E.	.43	8.15		P.E.	.20	3.77
		P.A.	.03	---		P.A.	.04	---		P.A.	.47	6.72
		P.T.D.	.18	3.74		P.T.D.	.21	3.90		P.T.D.	.69	10.89
		V.B.	.10	2.07		V.B.	..	..		V.B.	.30	5.94
		P.E.	.36	5.84		P.E.	.58	10.89		P.E.	.40	6.75
		P.A.	.27	4.43		P.A.	.15	2.52		P.A.	.39	5.11
		P.T.D.	.04	---		P.T.D.	.09	---		P.T.D.	.47	6.88
		V.B.	..	..		V.B.	..	..		V.B.	.17	3.15
		P.E.	.55	9.28		P.E.	.21	4.00		P.E.	.20	3.15
		P.A.	.04	---		P.A.	.06	---		P.A.	.27	3.40
		P.T.D.	.11	2.63		P.T.D.	.50	9.23		P.T.D.	.43	5.92
		V.B.	.14	3.03		V.B.	..	..		V.B.	.24	4.20
		P.E.	.62	12.16		P.E.	.46	8.71		P.E.	.15	2.69
		P.A.	.26	6.18		P.A.	.15	2.62		P.A.	.59	8.28
		P.T.D.	.18	4.80		P.T.D.	.30	5.47		P.T.D.	.74	11.53
		V.B.	.01	---		V.B.	..	..		V.B.	.30	5.89
		P.E.	.21	3.09		P.E.	.18	3.17		P.E.	.25	4.12
		P.A.	.27	3.74		P.A.	.35	5.50		P.A.	..	..
		P.T.D.	.06	---		P.T.D.	.02	---		P.T.D.	.21	4.03
		V.B.	.06	---		V.B.	..	..		V.B.	.05	---
		P.E.	.61	9.96		P.E.	.46	8.07		P.E.	.20	3.21
		P.A.	.25	3.85		P.A.	.07	---		P.A.	.37	4.54
		P.T.D.	.18	3.85		P.T.D.	.03	---		P.T.D.	.54	7.34
		V.B.	.30	6.89		V.B.	..	..		V.B.	.08	---
		P.E.	.56	9.44		P.E.	.32	5.32		P.E.	.19	3.38
		P.A.	.16	2.58		P.A.	.10	---		P.A.	.59	8.00
		P.T.D.	.29	6.40		P.T.D.	.01	---		P.T.D.	.74	11.27
		V.B.	.26	5.38		V.B.	..	..		V.B.	.25	4.81

The findings regarding Psychology revealed that: (a) emotions contributed significantly to prediction of academic performance, $R^2 = .52$, $F(18, 301) = 32.60$, $p < .01$, (b) the two set of predictors, as a group, accounted for significant variance of academic performance, $R^2 = .73$, $F(22, 297) = 56.13$, $p < .01$, (c) competence beliefs (mainly, ability self-perception) mediated the effect of emotions on academic performance, $Rch^2 = .19$, $Fch(4, 297) = 52.13$, $p < .01$, and (d) hope, $b = 1.42$, $t = 12.00$, $p < .01$, competence, $b = 1.12$, $t = 11.25$, $p < .01$, not angry-angry, $b = 1.40$, $t = 9.30$, $p < .01$, cheerfulness, $b = .89$, $t = 7.94$, $p < .01$, excitement, $b = .23$, $t = 2.03$, $p < .05$, not anxiety-anxiety, $b = .43$, $t = 6.50$, $p < .01$, pride, $b = .29$, $t = 2.90$, $p < .01$, performance expectations, $b = .17$, $t = 2.65$, $p < .01$, ability self-perceptions, $b = .60$, $t = 9.80$, $p < .01$, and value beliefs, $b = .12$, $t = 2.81$, $p < .01$, contributed uniquely to formulation of academic performance.

The findings for Linguistics showed that: (a) emotions influenced significantly academic performance, $R^2 = .45$, $F(15, 304) = 21.50$, $p < .01$, (b) altogether, emotions and the competence- and value beliefs explained 59% of the variability in performance, $F(19, 300) = 30.20$, $p < .01$, (c) competence beliefs (mainly, performance expectations) enhanced the impact of emotions on academic performance, $Rch^2 = .13$, $Fch(4, 300) = 32.15$, $p < .01$, and (d) pleasure, $b = .43$, $t = 2.45$, $p < .05$, encouragement, $b = .31$, $t = 2.76$, $p < .05$, confidence, $b = .26$, $t = 2.50$, $p < .05$, calmness, $b = .54$, $t = 4.83$, $p < .01$, not angry-angry, $b = 1.13$, $t = 7.30$, $p < .01$, cheerfulness, $b = .71$, $t = 7.80$, $p < .01$, performance expectations, $b = .44$, $t = 5.11$, $p < .01$, perceived task-difficulty, $b = .29$, $t = 4.10$, $p < .01$, contributed significantly to the generation of academic performance.

With regards to results for Physics, it was found (a) emotions was a significant and a positive predictor of academic performance, $R^2 = .21$, $F(15, 304) = 8.25$, $p < .01$, (b) the two sets of predictors, in combination, accounted for significant variance of academic performance, $R^2 = .73$, $F(18, 301) = 65.30$, $p < .01$, (c) value- and competence-beliefs (mainly, perceived task-difficulty) influenced significantly the impact of emotions on academic performance, $Rch^2 = .52$, $Fch(3, 301) = 104.55$, $p < .01$, and (d) pride, $b = .94$, $t = 15.80$, $p < .01$, encouragement, $b = .45$, $t = 5.50$, $p < .01$, not angry-angry, $b = .78$, $t = 7.50$, $p < .01$, excitement, $b = .31$, $t = 2.50$, $p < .05$, cheerfulness, $b = .79$, $t = 9.40$, $p < .01$, hope, $b = .35$, $t = 4.60$, $p < .01$, enjoyment, $b = .83$, $t = 6.35$, $p < .01$, not boredom-boredom, $b = .23$, $t = 2.80$, $p < .01$, performance expectations, $b = .34$, $t = 5.92$, $p < .01$, ability self-perceptions, $b = .25$, $t = 3.60$, $p < .01$, and perceived task-difficulty, $b = .48$, $t = 8.00$, $p < .01$, were significant formulators of academic performance.

The above findings also indicate that (a) emotions explained a greater amount of the variability in performance in Psychology than Linguistics and, particularly, Physics, (b) Linguistics performance evidenced the lowest prediction by all the predictor variables, and (c) the effects of beliefs in the impact of emotions on academic performance differed across the courses, in favoring Physics.

Thus, Hypotheses 5a and 5b were mainly confirmed.

Discussion

The aim of this study was to investigate (a) Early Childhood Education students' experienced emotions in the lectures of compulsory academic courses, (b) possible differences between the students who perceive their performance either as successful or unsuccessful in specific academic courses with respect to emotions, performance expectations, value beliefs, ability

self-perceptions and perceived task-difficulty, and (c) the effects of students' performance expectations, value beliefs, ability self-perceptions and perceived task-difficulty on their lecture emotions, and on the impact of emotions on academic performance. The study involved Linguistics, Physics and Psychology compulsory academic courses.

The findings regarding emotions were in the main as expected. The students experienced a rich variety of emotions in the lectures in each academic course. Specifically, they felt more intense positive self-esteem (competence, confidence, encouragement-not in Linguistics-), other-directed (anger-not anger) - and context (not irritated-irritated, enjoyment –not in Linguistics-) - related emotions than performance (not anxiety-anxiety)- and task- and future activity (boredom, not in Psychology, happiness, enthusiasm)- related emotions. These findings are in line with previous researches documenting the variety of student emotions and their sources (see Efklides & Volet, 2005; Jarvenoja & Jarvela, 2005; Pekrun et al., 2002; Stephanou, 2006a, 2007; Weiner, 2002, 2005).

The high intensity of context- and other- directed emotions highlights female students' sensitivity to changes of classroom context and their need of support by significant others, such as teachers (Frenzel, Pekrun, & Goetz, 2007; Hativa, Barak, & Simhi, 2001; Stephanou, 2006a; Stephanou & Kyridis, 2009; Turner & Meyer, 2000). This finding is also associated with research, documenting the early childhood students' preferences for teachers with field dependent characteristics than teachers with field independent characteristics (see Stephanou, 2006b). Overall, this result indicates the higher education students' need for support and interaction in classroom learning, as previous studies have shown (Carnell, 2007; Lizzio, Wilson, & Simons, 2002; Vermetten, Vermunt, & Lodewijks, 2002).

The students' experience of self-esteem emotions is consistent with research evidence showing that students' emotional experience during learning is influenced by their self-perceptions, and by situational, and motivation for the task factors (Fredrickson, 2001; Pekrun et al., 2002). Moreover, since tertiary education emphasizes academic performance, probably the students, during lectures, estimate self- factors in pursuing such a goal (see Anderman & Wolters, 2006; Perry et al., 2006; Schutz & Lenehart, 2002; Pekrun, Elliot & Maier, 2009; Pekrun & Stephens, 2009).

Lack of students' intensive negative emotions in the lectures may be related to the nature of the specific academic discipline. More accurately, students, who study 'soft' -humanities- subjects, are more likely to interact and participate in the lectures, and, consequently, feel better than students, who study 'hard' -mathematics- subjects, because 'soft' subjects are taught and learned by interactive methods than teacher-led methods (Jarvis & Woodrow, 2001; Kember & Gow, 1994). This finding may be also associated with students' gender. For example, previous research showed that female students enjoy classes more than men (Crombie, Pyke, Silverthorn, Jones, & Piccinin, 2003; Do & Schallert, 2004; Harackiewicz et al., 2002). This finding may also be a students' sign to get more engaged with, and succeed in the compulsory courses of their studies (Fredrickson, 2001). Furthermore, based on Carver's (2003) theory, it seems that the students felt that they made progress towards their academic goals, by attending the lectures of the courses.

Another explanation of this result might be the combination of students' ability self-perceptions, familiarity, perceived difficulty and perceived relevance of the course to their academic goals. Previous researches support that students' emotions may range from highly positive to highly negative in a difficult, unfamiliar and relevant to their goals learning situation (Efklides, 2001, 2006b; Pekrun et al., 2010b; Volet, 2001; Wosnitza & Volet, 2005).

The participants in the present study perceived psychology as a difficult task, had just one year experience in psychology, and psychology course was a compulsory part of their studies. On the other hand, students who feel competent develop coping strategies to protect well-being, and are more motivated to pursue their academic goals (Eccles & Wigfield, 2002; Guay, Marsh, & Boivin, 2003, Schunk & Zimmerman, 2006). Hence, in the present study, the students probably were highly motivated to succeed, and felt competent by ascribing psychology difficulty to lack of experience, not to lack of ability. Similarly, in consistency with the above argument and reerch evidence, since Linguistics and, mainly, Physics were familiar and of relevance to the students' goals, they experienced mild emotions in the lectures. However, this needs to be further investigated.

In agreement with our expectations, the students, who perceived their exam performance as successful, felt better in the lectures than the students, who estimated their performance as unsuccessful, across the three academic courses. Also, in line with Pekrun's model of student emotions, the achievement- related (pride, confidence, competence) emotions, as compared to the learning processes- related (enjoyment, boredom) emotions, were more powerful factors in discriminating the successful from the unsuccessful performance groups of students in Linguistics and, mainly, in Psychology. However, context-, and task- related affects had significant contribution in discriminating the two groups of students suggesting the importance of learning environment and teachers in facilitating students' learning and performance (Brok, 2001; Hativa et al., 2001; Lizzio, et al., 2002; Marsh & Dunkin, 1997; Stephanou, 2006b; Stephanou & Kyridis, 2008, 2009). Furthermore, in Physics, the two groups of students were predominately separated by the context- and task- related emotions. This could be partly attributed to students' long experience in physics.

Finally, the magnitude of emotions in separating the successful from the unsuccessful group of students was higher in Psychology than in Physics or Linguistics, and in Physics than in Linguistics (the opposite pattern was found for pleasure, pride and encouragement). This may be related to girls' tendency to overestimate the difficulty of a novel achievement task (see Eccles & Wigfield, 2002, Stephanou, 2008).

The findings regarding the effects of competence beliefs, value beliefs and perceived task-difficulty in separating the groups of students who perceived their performance as successful vs. unsuccessful performance were partly in line with Wigfield and Eccles's (2000) expectancy-value model, our hypotheses, and other findings (e.g., Eccles et al., 1998; Schunk & Zimmerman, 2006; Stephanou, 2004a,b, 2008.).

Specifically, in Psychology, unexpectedly, ability self-perceptions rather than performance expectations proved more powerful factor in separating the successful students from the unsuccessful students. This specific finding might be partly explained by the educational level of the participants with respect to achievement goals and academic experience. Specifically, the studies in tertiary education are predominantly performance oriented, and high ability is considered as a prerequisite of success (Barron & Harackiewicz, 2003; Harackiewicz et al., 2002; Pintrich, 2000; Stephanou, 2003). In addition, the upper high school defines success on the basis of high ability and outperforming others (Stephanou, 2004a, 2005). Thus, the students might have formulated constant belief about their general academic ability, although they might have not had such belief in Psychology, and probably believed that high ability was needed in success. However, research is needed to explore these links. In addition, supporting mainly Eccles and Wigfield's (2002) model, value beliefs had no significant contribution in discriminating the successful from the unsuccessful performance group.

Also, in contrast to our hypothesis, in Physics, perceived task-difficulty was the most powerful factor in separating the two groups of students, and performance expectations had no significant contribution. This finding may lend indirect support to the notion that the association of the feeling of difficulty with performance is higher in objectively moderate difficulty tasks than in objectively low or high difficulty (see Efklides, 2006a). Yet, probably, students' previous high school experience in Physics tasks facilitated their awareness of the difficulty of the course and the process in pursuit performance (see Eccles & Wigfield, 2002; Efklides, 2006b; Schunk & Zimmerman, 2006).

The effects of the students' competence and value beliefs and perceptions of task-difficulty on emotions were mainly in agreement with our expectations and Pekrun's model. Specifically, students' beliefs were positively related to their experienced emotions in the lectures of the courses. Furthermore, the strength of the association of these beliefs with the emotions varied across the academic courses and within each academic course. More accurately, performance expectations and ability self-perceptions, as compared to the other factors, were more powerful formulators of the students' experienced emotions in both Linguistics and Psychology, whereas, perceived task-difficulty, in comparison to the other variables, was the most powerful factor in the generation of the students' emotions in Physics. Thus, confirming the relevant to the topic literature (e.g., Ainley et al., 2009; Efklides, 2001; Goetz et al., 2007; Stephanou, 2006a, 2007), the observed relationships were domain-specific.

The findings also in the main supported the notion that ability self perception is particularly related to self esteem- and performance- related affects, such as competence, confidence and anxiety, and pleasure, performance expectations are particularly associated with future behaviour related- emotions, such as hope, confidence and encouragement, and perceived difficulty is mainly associated with task- and future activity- related emotions, such as boredom, enthusiasm and confidence (Efklides, 2006b; Pekrun et al., 2002; Weiner, 1992, 2005). Unexpectedly, task value was not strongly related to interest, and had a limited or non significant contribution into emotions. The latter finding may hind the notion that the tertiary education students were not intrinsically motivated, or they focused on self- and task- related factors rather than on the other factors. Research is needed to explore this topic more.

Further, in consistency with other researches (see Anderman & Wolters, 2006; Efklides & Volet, 2005; Pekrun et al., 2009; Pekrun et al., 2010; Pintrich, 2003), the two sets of factors, namely emotions and perceptions of self and task, had positive and complementary consequences for performance. Moreover, students' factors played significant role in the impact of emotions on performance in Linguistics, Psychology and, mainly, Physics. That means that the students, who had strong competence- and value beliefs and perceived the task less difficult, were more likely to experience positive emotions in lectures, and, in turn, to achieve higher exam performance, relative to students with low these factors. Although perceived ability was the most powerful predictor, followed by performance expectations and perceived difficulty (or vice versa), emotions (particularly, competence, pride, flow, hope, enthusiasm, and calmness) accounted for a significant portion of the variance of performance.

Implications of the Findings for Educational Practice and Future Research

The findings from the present study suggest that students have certain competence, task and value beliefs that influence their emotions in the lectures, and perceived academic performance. Furthermore, the different effects of self-, task- and value- beliefs in the formation of

emotions and academic performance suggest their different roles in motivating students (Eccles, 2005; Eccles, Vida, & Barber, 2004; Pintrich, 2003; Watt, 2004). Students may enhance these beliefs, when they have opportunities for self-regulated learning, are involved into useful, interest and meaningful task and activities, and have success experience in challenge task and activities (Boarkates & Corno, 2005; Pintrich, 2003; Pintrich & Schunk, 2002; Eccles & Wigfield, 2002).

Overall, the findings from this study provide insight on how student emotions and competence- and values beliefs factors interact in academic success. More accurately, the present findings support that, while cognitive factors influence academic performance, students' experienced emotions in lectures are involved in achievement. Thus, university learning environment should satisfy as many as possible aspects of students' life.

Conclusively, investigating students' emotions in respect to person, task and context might provide useful information in understanding learning and achievement in tertiary education. Also, it is important in examining emotional experience, cognitive factors and value beliefs by academic course, taking into account gender, nature of studies, previous experience and educational level. Furthermore, it is interesting to examine how the contextual factors, such as content and methods of instruction and teacher's behavior, facilitate students' generation of emotions in lectures, and their competence, task and value beliefs in academic courses, as well as how these four constructs work together and differentially affect learning and achievement.

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